

US 9,409,725 B2

Aug. 9, 2016

# (12) United States Patent

# Stikkelorum

# (54) DEVICE FOR SORTING PRODUCTS

Simon Gerardus Stikkelorum, Haps (75)Inventor:

Assignee: VANDERLANDE INDUSTRIES B.V.,

Veghel (NL)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 410 days.

(21) Appl. No.: 13/696,108

(22) PCT Filed: Apr. 29, 2011

(86) PCT No.: PCT/NL2011/050295

§ 371 (c)(1),

(2), (4) Date: Feb. 4, 2013

(87) PCT Pub. No.: WO2011/139147

PCT Pub. Date: Nov. 10, 2011

(65)**Prior Publication Data** 

> May 23, 2013 US 2013/0126304 A1

(30)Foreign Application Priority Data

May 6, 2010 (NL) ...... 2004675

(51) Int. Cl.

B65G 47/40 (2006.01)B65G 47/96 (2006.01)

(52) U.S. Cl.

CPC ...... B65G 47/40 (2013.01); B65G 47/962 (2013.01)

(58) Field of Classification Search

CPC ...... B65G 47/962 USPC ...... 198/370.04, 370.01, 377.02, 370.03, 198/621.3; 209/707

See application file for complete search history.

(10) Patent No.: (45) Date of Patent:

(56)

# References Cited U.S. PATENT DOCUMENTS

5,732,439 A *	3/1998	Hartlepp		
(Continued)				

## FOREIGN PATENT DOCUMENTS

EP	0960838 A1	12/1999
EP	1411008 A1	4/2004
EP	1447359 A2	8/2004

# OTHER PUBLICATIONS

Search Report for Dutch Patent Application No. 2004675; Feb. 9,

(Continued)

Primary Examiner — Gene Crawford Assistant Examiner — Lester Rushin (74) Attorney, Agent, or Firm — Barnes & Thornburg LLP

## ABSTRACT

A device for sorting products having carrier units arranged adjacent to each other and conveying means for supporting and conveying the carrier units. Each carrier unit has a support platform, support means for supporting the support platform, leg members supported by the conveying means and tiltably supporting the support means, and tilting means for tilting the support means relative to each other about a tilt axis extending parallel to the conveying path. The tilting means has at least one cam and drive means having an electric motor supported by the conveying means for rotating the at least one cam relative to the leg members about an axis of rotation, as well as a camway which is rigidly connected to the support means and with which the at least one cam mates upon rotation of the at least one cam about the axis of rotation. The tilt axis is located between the axis of rotation and the support platform.

# 14 Claims, 5 Drawing Sheets

